

AMENDMENTS TO THE CLAIMS

Claims 1-15 (canceled)

Claim 16 (previously presented) In a communication system for communicating with a plurality of mobile nodes, the system managing Internet Protocol (IP) addresses in multiple address pools, the multiple pools having overlapping IP addresses and each pool being associated with a unique home agent IP address, a method comprising:

assigning a home IP address to a given mobile node from one of the multiple pools; and, in a mobility agent, using a combination of the assigned home IP address of the given mobile node and an IP address of a home agent to uniquely identify a communication link for the given mobile node.

Claim 17 (previously presented) The method of claim 16, wherein the mobility agent comprises a foreign agent.

Claim 18 (previously presented) The method of claim 16, wherein the multiple pools are included in the mobility agent; and

assigning the home IP address to the given mobile comprises assigning the home IP address to the given mobile node from among one of the multiple pools stored in the mobility agent.

Claim 19 (previously presented) The method of claim 18, wherein assigning the home IP address to the given mobile is performed by the mobility agent.

Claim 20 (previously presented) The method of claim 16, wherein assigning the home IP address to the given mobile is performed by the mobility agent.

Claim 21 (previously presented) A communication system for communicating with a plurality of mobile nodes in a communication system, the communication system managing multiple Internet Protocol (IP) address pools having overlapping IP addresses, each pool being associated with a unique home agent IP address, wherein a home IP address for a given mobile node is associated with one of the multiple pools, the system comprising:

a mobility agent that uses a combination of the home IP address and an IP address of a home agent to uniquely identify a communication link for the given mobile node.

Claim 22 (previously presented) The communication system of claim 21, wherein the mobility agent is a foreign agent.

Claim 23 (previously presented) The communication system of claim 21, wherein:
the mobility agent comprises the multiple pools; and
the mobility agent assigns the home IP address to a given mobile node from one of the multiple pools.

Claim 24 (new) A mobility agent for use in a communication system for communicating with a plurality of mobile nodes, wherein the communication system manages Internet Protocol (IP) addresses included in multiple address pools, the multiple address pools

having one or more overlapping IP addresses and each pool being associated with a unique home agent IP address, the mobility agent comprising:

a processing device;

a storage device having a plurality of machine executable instructions that, when executed by the processing device, provide for:

using a combination of an assigned home IP address of the given mobile node and an IP address of a home agent with which the mobile node is associated to uniquely identify a communication link for a given mobile node of the plurality of mobile nodes.

Claim 25 (new) The mobility agent of claim 24, wherein the mobility agent comprises a foreign agent.

Claim 26 (new) The mobility agent of claim 24, wherein the mobility agent is implemented in a remote access server.

Claim 27 (new) The method of claim 24, wherein the machine executable instructions further provide for:

assigning the assigned home IP address to the given mobile.

Claim 28 (new) The method of claim 27, wherein the multiple address pools are included in the mobility agent.

Claim 29 (new) The mobility agent of claim 24, wherein the communication link for the given mobile node comprises a point-to-point protocol link.

Claim 30 (new) A mobility agent for routing a data packet associated with a given mobile node, the mobility agent comprising:

machine executable instructions that when executed provide for:

processing the data packet associated with the given mobile node, the processing including:

associating a home Internet Protocol (IP) address and a home agent IP address contained in said data packet to determine a unique communication link address corresponding with the given mobile node; and

routing the data packet to the given mobile node via the unique communication link address.

Claim 31 (new) The mobility agent of claim 30, wherein the instructions further provide for maintaining a table mapping communication link addresses to unique pairs of home IP addresses and home agent IP addresses, and

wherein associating home Internet Protocol (IP) addresses and home agent IP addresses is accomplished by reference to the table, such that multiple mobile nodes having the same home IP addresses but different home agent IP address may be distinguished from each other.

Claim 32 (new) The mobility agent of claim 30, wherein the mobility agent comprises a remote access server for establishing respective communication links with one or more mobile nodes.